

A NEW SPECIES OF *PARALEPTOPHLEBIA* FROM TENNESSEE (EPHEMEROPTERA: LEPTOPHLEBIIDAE)¹

Boris C. Kondratieff, Richard S. Durfee²

ABSTRACT: A distinctive new species of mayfly, *Paraleptophlebia kirchneri*, is described and illustrated from Trousdale County, Tennessee. The adult male of the new species is easily distinguished from all other North American species by the long penis lobes with a ventral-subterminal, forked appendage.

The genus *Paraleptophlebia* in North America presently includes 36 species (Edmunds *et al.* 1976, Harper and Harper 1986, and Robotham and Allen 1988). The taxonomy of the northeastern and southeastern [geographic subdivisions after Edmunds *et al.* (1976)] species are relatively well known because of the excellent taxonomic studies of Berner (1975), Burks (1953), and Traver (1935). Using the combination of abdominal color and genitalic differences, adult males can be readily identified using existing keys (Traver 1935, Burks 1953).

Recently, collecting in northcentral Tennessee revealed the presence of a distinctive new species that is described herein. The terminology follows Traver (1935).

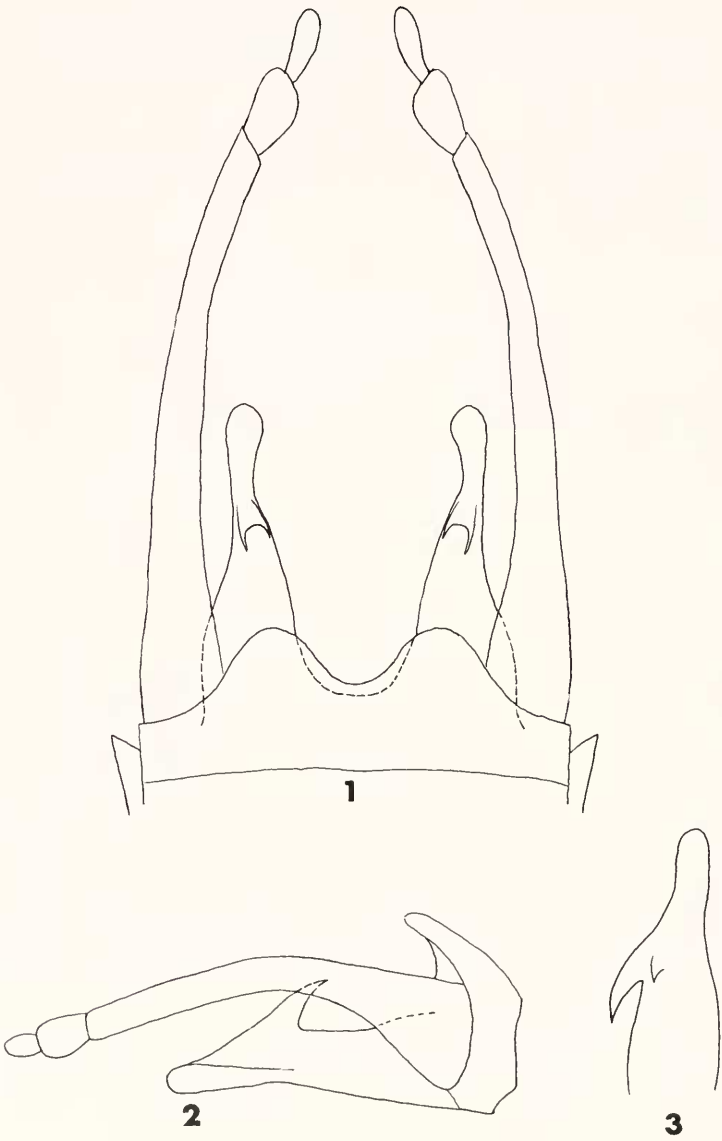
Paraleptophlebia kirchneri, NEW SPECIES

Male imago (in alcohol): Length of body and forewing 6 mm. Head and thorax dark red-brown with darker markings on thoracic pleural folds. Legs light brown. Wings hyaline, longitudinal veins light brown, crossveins colorless. Slight milky cloud in stigmatic area. Tergite 1 dark brown, tergites 2-6 white, each with narrow black posterior transverse band and posterolateral mark. Tergites 8-10 brown. Sternites 2-7 hyaline white. Sternites 8-9 stained with brown. Midventral ganglionic marks orange on all sternites. Genital forceps white, penes light brown. Each penis lobe long with a ventral-subterminal, slightly sclerotized, forked appendage, the outer tooth longer (Figs. 1-3). Caudal filaments white.

Female imago (in alcohol): Length of body 7 mm, forewing 6.5 mm. Head and thorax dark brown. Legs light brown. Wings hyaline, longitudinal veins and crossveins light brown. Abdominal segments brown with purple-black shading along posterior margin of tergites. Posterior margin of abdominal sternum 9 with a deep broadly rounded excavation.

¹ Received May 6, 1994. Accepted May 31, 1994.

² Colorado State University, Department of Entomology, Fort Collins, Colorado 80523.



Figs. 1-3. *Paraleptophlebia kirchneri*, holotype. 1. Ventral view of penes and forceps; 2. Lateral view of penis lobe and forceps; 3. Oblique view of left penis lobe.

Etymology: The patronym honors the aquatic biologist and good friend, Ralph Fred Kirchner. The senior author has traveled many thousands of miles with Fred in search of species of mayflies, stoneflies and caddisflies.

Material Examined: *Holotype*, male imago, Tennessee: Trousdale County, tributary to Second Creek, Crenshaw Road, 9 April 1994, B. C. Kondratieff and R. F. Kirchner. Paratype female, same data as holotype.

The holotype and paratype will be deposited in the U.S. National Museum of Natural History, Washington, D.C.

Diagnosis: The shape and armature of the penes of *P. kirchneri* are not similar to those of any other described North American species. The long penis lobes with a ventral-subterminal, forked appendage, with the outer tooth longer, is unique to the genus (Figs. 1-3).

Remarks. Other species of mayflies collected with *P. kirchneri* were *Acentrella carolina* (Banks) and *Stenonema femoratum* (Say). Additionally, *Helopicus rickeri* Stark, a rare species of stonefly (Perlodidae) occurs at the type locality.

ACKNOWLEDGMENTS

We thank Howard E. Evans and Howard Rhodes, Colorado State University for prepublication reviews. Charles H. Nelson, University of Tennessee at Chattanooga, guided the senior author to this area of Tennessee.

LITERATURE CITED

- Berner, L. 1975. The mayfly family Leptophlebiidae in the southeastern United States. Florida Entomol. 58: 137-156.
- Burks, B. D. 1953. The mayflies, or Ephemeroptera of Illinois. Bull. Illinois Nat. Hist. Sur. 26: 1-216.
- Edmunds, G. F., Jr., S. L. Jensen, and L. Berner. 1976. Mayflies of North and Central America. Univ. Minnesota Press, Minneapolis.
- Harper, F. and P. P. Harper. 1986. An annotated key to the adult males of the northwestern Nearctic species of *Paraleptophlebia* Lestage (Ephemeroptera: Leptophlebiidae) with the description of a new species. Can. J. Zool. 64: 1460-1468.
- Robotham, C. D. and R. T. Allen. 1988. *Paraleptophlebia calcarica*, n. sp. (Ephemeroptera: Leptophlebiidae) from western Arkansas. J. Kansas Entomol. Soc. 61: 317-320.
- Traver, J. R. 1935. Part II. Systematic. pp. 239-739. In J. G. Needham, J. R. Traver and Y. C. Hsu (eds). The biology of mayflies with a systematic account of North American species. Comstock Publ. Co., Ithaca, New York.